

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-24 (Canceled)

- 1 25. **(Withdrawn)** Method for the mechanised manufacture of tied dough blanks
- 2 composed of dough strands, in particular of pretzel blanks, wherein in a first step a dough
- 3 strand (46) is received by the dough strand ends (46a) by a tying head (9) of a dough-
- 4 tying device, which is in a gripping position (48), wherein in a second step the dough
- 5 strand (46) is stretched in its longitudinal direction by a degree of stretch (d), the tying
- 6 head (9) with the dough strand ends (46a) is moved from the gripping position (48) into a
- 7 stretching position (49), and the dough strand intermediate section is held between the
- 8 dough strand ends (46a) by means of a stationary stop (5, 6), wherein in a third step the
- 9 tying head (9) is moved into a tying position (51) or is rotated, the dough strand (46)
- 10 being tied, and
- 11 wherein in a fourth step the tying head (9) is moved into a depositing position (52) in
- 12 which the dough strand ends are deposited on the rest of the dough strand,
- 13 characterised in that:
 - 14 in the second step a control which may be set by programme and/or circuit
 - 15 technology is used with an actuator (15) for the tying head (9), in the case of
 - 16 which control or actuator the degree of stretch (d) may be preset in a variable
 - 17 manner.

1 26. (**Withdrawn**) Method for the mechanised manufacture of tied dough blanks
2 composed of dough strands, in particular of pretzel blanks, wherein in a first step a dough
3 strand (46) is received by the dough strand ends (46a) by a tying head (9) of a dough
4 tying device, which is in a gripping position (48), wherein in a second step the dough
5 strand (46) is stretched in its longitudinal direction by a degree of stretch (d), the tying
6 head (9) with the dough strand ends (46a) is moved from the gripping position (48) into a
7 stretching position (49), and the dough strand intermediate section is held between the
8 dough strand ends (46a) by means of a stationary stop (5, 6), wherein in a third step the
9 tying head (9) is moved into a tying position (51) and/or is rotated, the dough strand (46)
10 being tied, and
11 wherein in a fourth step the tying head (9) is moved into a depositing position (52) in
12 which the dough strand ends are deposited on the rest of the dough strand, characterised
13 in that:
14 by means of one or more sensors (38, 39) the dough strand ends (46a) of the
15 dough strands (46) are detected in a measuring position located upstream of the
16 gripping position (48) viewed in the conveying direction (35), and thereupon the
17 grasping of the dough strand ends by the tying head (9) is triggered.

1 27. (**Withdrawn**) Method according to claim 25 or 26, characterised in that a tension
2 generated during the second or stretching step is maintained in the dough strand (46)
3 during the third or tying step wholly or in part.

1 28. **(Withdrawn)** Method according to claim 27, characterised in that in order to
2 maintain this tension in the third step, knot-tying guide means (10, 11) are used, which
3 form a guide passage.

1 29. **(Withdrawn)** Method according to claim 27, characterised in that in the second or
2 stretching step, the tying head (9) with the dough strand ends (46a) is removed (50) from
3 the stop (5, 6) in or according to a dough strand conveying direction (35).

1 30. **(Withdrawn)** Method according to claim 28, characterised in that in the course of
2 removal (50), a component of motion transverse to the dough strand conveying direction
3 (35) is superimposed on the tying head (9).

1 31. **(Withdrawn)** Method according to claim 28, characterised in that in the third step, in
2 order to reach the tying position (51), the tying head (9) is moved (23) with the dough
3 strand ends (46a) counter to the dough strand conveying direction (35).

1 32. **(Withdrawn)** Method according to claim 28, characterised in that in the fourth step,
2 in order to reach the depositing position (52), the tying head (9) with the dough strand
3 ends (46a) is moved (53) counter to the dough strand conveying direction (35).

1 33. **(Withdrawn)** Method according to claim 32, characterised in that in the course of
2 reaching (53) the depositing position (52) a component of motion transverse to the dough
3 strand conveying direction (35) is superimposed on the tying head (9) in order to
4 approach the dough strand intermediate section between the dough strand ends (46a).

1 34. **(Currently amended)** Apparatus for the mechanised manufacture of tied dough
2 products, in particular pretzels, comprising:

3 (a) a shaping table (2) for the support of a curved dough strand (46) with an
4 activatable shaping tool (6) for the abutment of the curved dough strand (46)
5 transverse to the support direction, wherein the shaping table (2) and the activated
6 shaping tool (6) form a common shaping stop for the curved dough strand (46),
7 wherein the common shaping stop is formed stationary or fixed with respect to a
8 dough strand conveying direction (35); and

9 (b) a tying head (9) for grasping the dough strand ends and tying the dough strand
10 (46), wherein the tying head (9) is so guided and connected to one or more actuators
11 that the tying head (9) is movable from a gripping position (48) in which the dough
12 strand ends of the curved dough strand (46) are grasped, to a stretching position
13 (49) in which the dough strand (46) is stretchable in combination with the stop,
14 characterised in that

15 one (15) of the actuators (15; 27, 28) of the tying head (9) is so arranged ~~by circuit~~
16 ~~or programming technology~~ that the tying head (9) may be moved from the

17 gripping position (48) into a stretching position (49) ~~which may be preset in a~~
18 ~~variable manner and while being moved from the gripping position (48) into the~~
19 ~~stretching position (49) also has a motion component away from the shaping stop~~
20 ~~in the conveying direction.~~

1 35. **(Currently amended)** Apparatus according to claim 34, characterised in that the
2 actuator (15) ~~arranged by circuit or programming technology for presetting the stretching~~
3 ~~position (49) in a variable manner~~ is guided parallel to the conveying direction (35) and is
4 formed with an electric servo or stepper motor (16).

1 36. **(Previously presented)** Apparatus according to claim 35, characterised in that the
2 actuator (15) has a linear guide (18, 19) which is coupled (17,22) to the servo or stepper
3 motor (16) and which extends parallel to the dough strand conveying direction (35) and
4 beyond an outlet of the shaping table (2) facing in the conveying direction (35).

1 37. **(Previously presented)** Apparatus for the mechanised manufacture of tied dough
2 products, in particular pretzels, comprising:
3 (a) a shaping table (2) for supporting a curved dough strand (46);
4 (b) an activatable shaping tool (6) for the abutment of the curved dough strand (46)
5 transverse to the support direction, wherein the shaping table (2) and the activated
6 shaping tool (6) form a common shaping stop for the curved dough strand (46),

7 wherein the common shaping stop is formed stationary or fixed with respect to a
8 dough strand conveying direction (35); and

9 (c) a tying head (9) for grasping the dough strand ends and tying the dough strand
10 (46), wherein the tying head (9) is so guided and connected to one or more
11 actuators (15; 27, 28) that the tying head (9) is movable from a gripping position
12 (48) in which the dough strand ends of the curved dough strand (46) are grasped,
13 to a stretching position (49) in which the dough strand (46) is stretchable in
14 combination with the stop,

15 characterised in that

16 in order to detect the dough strand ends (46a) of the curved dough strands (46)
17 one or more sensors (38, 39) are provided, whose measuring positions are
18 upstream of the gripping position (48) in the conveying direction (35).

1 38. (**Previously presented**) Apparatus according to claim 37, characterised in that the
2 respective measuring position of the sensor(s) (38, 39) is formed on the shaping table (2).

1 39. (**Previously presented**) Apparatus according to claim 38, characterised by a sensor
2 measuring position such that the dough strand ends (46a) of the curved dough strand (46)
3 lying on the shaping table (2) may be detected by the sensors (38, 39).

1 40. (**Previously presented**) Apparatus according to claim 38, wherein the shaping table
2 has one or more conveying strands (3, 4) and associated deflection sheaves around which
3 the conveyor strands pass, characterised in that the sensor(s) (38, 39) are disposed
4 immediately above the one or more deflection sheaves of the conveyor strands (3, 4)
5 positioned to the rear in the conveying direction (35).

1 41. (**Previously presented**) Apparatus according to claim 40, characterised in that the
2 tying head (9) is so guided and connected to the actuator(s) (15) that the tying head (9)
3 may be moved (23) from the stretching position into a tying position (51) in which the
4 dough strand may be knotted.

1 42. (**Previously presented**) Apparatus according to claim 40, characterised in that the
2 tying head (9) is so guided and connected to the actuator(s) (15) that the tying head (9)
3 may be moved (53) from the tying position (51) into a depositing position (52) in which
4 the dough strand ends may be deposited on the dough strand intermediate section.

1 43. (**Previously presented**) Apparatus according to claim 40, characterised in that the
2 shaping tool (6), with pins (5) or other holding bodies, may be moved steadily in or
3 counter to the dough strand conveying direction (35) and only in one direction (44, 45)
4 transverse or oblique thereto.

1 44. (**Previously presented**) Apparatus according to claim 40, characterised in that two
2 sensors (38, 39) are disposed at the sides of the shaping table (2) diametrically opposed or
3 otherwise opposite one another, so that a measuring line or a measuring plane is formed
4 at least in parts parallel to the shaping table (2) and transverse or oblique to the dough
5 strand conveying direction (35), the sensors (38, 39) being disposed in the starting region
6 or in the last half of the shaping table (2) in the conveying direction (35).

1 45. (**Previously presented**) Apparatus according to claim 40, wherein the actuators (15,
2 16; 25; 27, 28) of the tying head (9) comprise a rotary drive (25), characterised in that the
3 rotary drive (25) is formed to be programme-controlled with a servo or stepper motor.

1 46. (**Previously presented**) Apparatus according to claim 40, wherein the actuators (15,
2 16, 17; 25; 27, 28) of the tying head (9) comprise a rotary drive (25), characterised in that
3 its axis of rotation (57) is formed as an endless rotary axis and permits rotation of the
4 tying head (9) through 360° and/or 720° or through plural revolutions, a rotary duct
5 being provided for passing through the control signals and supply currents for the tying
6 head or its rotary drive (25).

1 47. (**Previously presented**) Apparatus according to claim 40, characterised in that the
2 actuator(s) (15; 25; 27, 28) are connected to a control, which is so arranged in terms of
3 circuit or programme technology that sets of parameters may be stored and retrieved,

4 which comprise the number of rotations of a rotary drive (25) for the tying head (9) or the
5 degree of stretch (d) or the coordinates of a gripping, stretching, tying or depositing
6 position for the actuator (15).

1 48. **(Previously presented)** Apparatus according to claim 47, characterised in that the
2 control is so formed by circuit and/or programme technology that all or some of the
3 control parameter sets mentioned are referenced via a dough product encryption key.